

CLAIMS

1. A dispenser for attachment to a container containing a fluid, comprising:
an actuator operative to allow said fluid to be released from said container into said dispenser; and
an intermittent dispensing assembly that provides an intermittent fluid output, said intermittent dispensing assembly comprising a temperature responsive shifting element,
said temperature responsive shifting element being shiftable in response to temperature changes in said dispenser and being generally freely supported around a perimeter thereof in said dispenser.
2. A dispenser according to claim 1 and wherein said shifting element comprises a bimetallic element having first and second operative orientations depending on the temperature thereof.
3. A dispenser according to claim 2 and wherein said bimetallic element comprises a bimetallic disc.
4. A dispenser according to claim 1 and wherein said intermittent dispensing assembly comprises a plunger movable in response to shifting of said shifting element.
5. A dispenser according to claim 4 and wherein said plunger is loosely mounted onto said shifting element.
6. A dispenser according to claim 4 wherein said plunger is welded to said shifting element.
7. A dispenser according to claim 4 wherein said plunger is integrally formed with said shifting element.

8. A dispenser according to claim 4 and wherein said plunger is engaged by a biasing spring element.
9. A dispenser according to claim 8 and wherein said biasing spring element comprises a spiral spring.
10. A dispenser according to claim 8 and wherein said biasing spring element comprises a helical spring.
11. A dispenser according to claim 8 and wherein said biasing spring element comprises a leaf spring.
12. A dispenser according to claim 8 and wherein said biasing spring comprises a folded over spring.
13. A dispenser according to claim 1 and wherein said intermittent dispensing assembly also comprises a screw biased by a rotatably adjustable knob.
14. A dispenser according to claim 13 and wherein said rotatably adjustable knob is operative to select a time interval between sprays.
15. A dispenser according to claim 13 and wherein said rotatably adjustable knob is operative to select a spray initiation temperature.
16. A dispenser according to claim 4 and also including a spray release valve.
17. A dispenser according to claim 16 and wherein said plunger engages a ball of said spray release valve.

18. A dispenser according to claim 16 and wherein said plunger comprises a pin for engaging said spray release valve.

19. A dispenser according to claim 1 and wherein said dispenser comprises a plurality of radially distributed inward facing resilient prongs for resiliently engaging said container.

20. A dispenser according to claim 19 and wherein said prongs are provided with legs for engaging said container so as to prevent removal of said dispenser from said container.

21. A dispenser according to claim 20 and wherein said prongs engage said container at a location adjacent to a portion of a cover of a container opening valve of said container.

22. A dispenser according to claim 21 and wherein said location is on an outwardly protruding portion of said cover for engaging inwardly facing legs of said prongs.

23. A dispenser according to claim 1 and wherein said dispenser engages said container in a ringless engagement.

24. A dispenser according to claim 1 and wherein said dispenser comprises a fastening element resiliently engaging said container.

25. A dispenser according to claim 1 and also comprising at least one spray nozzle.

26. A dispenser according to claim 1 and wherein said dispenser is formed with a recess on a bottom portion thereof.

27. A dispenser according to claim 26 and wherein said recess engages a discharge orifice element of a container opening valve of said container.
28. A dispenser according to claim 1 and wherein said intermittent dispensing assembly also comprises a temperature dependent biasing force application functionality.
29. A dispenser according to claim 28 and wherein said temperature dependent biasing force application functionality comprises an ambient temperature sensor responsive to changes in ambient temperature outside said dispenser so as to selectively bias said shifting element.
30. A dispenser according to claim 29 and wherein said ambient temperature sensor comprises a bimetallic coil element.
31. A dispenser according to claim 29 and wherein said ambient temperature sensor does not communicate with said fluid.
32. A dispenser according to claim 29 and also comprising a rotatable cam fixedly mounted onto a shaft rotatable by said ambient temperature sensor.
33. A dispenser according to claim 1 and wherein a rotatable cam applies a biasing force to a biasing spring element.
34. A dispenser according to claim 33 and wherein said biasing force increases as ambient temperature outside said dispenser is lowered and decreases as said temperature rises.
35. A dispenser according to claim 34 and wherein said biasing force is minimized when said temperature is below a minimum operation temperature.

36. A dispenser according to claim 34 and wherein said biasing force is minimized when said temperature is above a maximum operation temperature.

37. A dispenser according to claim 36 and wherein said temperature above said maximum operation temperature is below a shift actuating temperature of said shifting element.

38. A dispenser according to claim 33 and wherein said rotatable cam has a thickness such that said rotatable cam applies a suitable biasing force to said shifting element via said biasing spring element so as to dispense said fluid substantially within a uniform selected time interval between sprays.

39. A dispenser according to claim 33 and wherein said rotatable cam has a thickness sufficiently small such that said rotatable cam provides a sufficiently low biasing force to said shifting element so as to minimize shifting of said shifting element.

40. A dispenser according to claim 1 and wherein said shifting element is loosely mounted within said dispenser.

41. A dispenser according to claim 1 and wherein said shifting element is seated in an annular recess in said dispenser.

42. A dispenser according to claim 1 and wherein said dispenser comprises a volume surrounding said shifting element and being formed with inclined walls on a bottom portion thereof.

43. A dispenser according to claim 1 and wherein at least part of said fluid passes around said shifting element via passageways formed in said dispenser.

44. A dispenser according to claim 1 and wherein a volume overlying said shifting element allows for enhanced dissipation of said fluid and thereby reduces incidence of liquid droplets in said fluid exiting said dispenser.

45. A dispenser according to claim 1 and wherein said dispenser defines an internal volume so as to relatively thermally isolate said intermittent dispensing assembly from the ambient outside said dispenser.
46. A dispenser according to claim 1 and wherein said fluid is dispensed as an aerosol.
47. A dispenser according to claim 1 and wherein said fluid is dispensed as a dissipated aerosol.
48. A dispenser according to claim 1 and wherein said fluid comprises a deodorant.
49. A dispenser according to claim 1 and wherein said fluid comprises an insecticide.
50. A dispenser according to claim 1 and also comprising a flow prevention element.
51. A fluid dispensing system comprising:
a container containing a fluid; and
a dispenser for receiving said fluid via an opening in said container and comprising an intermittent dispensing assembly that provides an intermittent fluid output,
said intermittent dispensing assembly comprising a temperature responsive shifting element,
said temperature responsive shifting element being shiftable in response to temperature changes in said dispenser and being generally freely supported around a perimeter thereof in said dispenser.

52. A dispenser according to claim 51 and wherein said shifting element comprises a bimetallic element having first and second operative orientations depending on the temperature thereof.

53. A dispenser according to claim 52 and wherein said bimetallic element comprises a bimetallic disc.

54. A dispenser according to claim 51 and wherein said intermittent dispensing assembly comprises a plunger, movable in response to shifting of said shifting element.

55. A dispenser according to claim 54 and wherein said plunger is loosely mounted onto said shifting element.

56. A dispenser according to claim 54 wherein said plunger is welded to said shifting element.

57. A dispenser according to claim 54 wherein said plunger is integrally formed with said shifting element.

58. A dispenser according to claim 54 and wherein said plunger is engaged by a biasing spring element.

59. A dispenser according to claim 58 and wherein said biasing spring element comprises a spiral spring.

60. A dispenser according to claim 58 and wherein said biasing spring element comprises a helical spring.

61. A dispenser according to claim 58 and wherein said biasing spring element comprises a leaf spring.

62. A dispenser according to claim 58 and wherein said biasing spring element comprises a folded over spring.

63. A dispenser according to claim 51 and wherein said intermittent dispensing assembly also comprises a screw biased by a rotatably adjustable knob.

64. A dispenser according to claim 63 and wherein said rotatably adjustable knob is operative to select a time interval between sprays.

65. A dispenser according to claim 63 and wherein said rotatably adjustable knob is operative to select a spray initiation temperature.

66. A dispenser according to claim 54 and also including a spray release valve.

67. A dispenser according to claim 66 and wherein said plunger engages a ball of said spray release valve.

68. A dispenser according to claim 66 and wherein said plunger comprises a pin for engaging said spray release valve.

69. A dispenser according to claim 51 and wherein said dispenser comprises a plurality of radially distributed inward facing resilient prongs for resiliently engaging said container.

70. A dispenser according to claim 69 and wherein said prongs are provided with legs for engaging said container so as to prevent removal of said dispenser from said container.

71. A dispenser according to claim 70 and wherein said prongs engage said container at a location adjacent to a portion of a cover of a container opening valve of said container.

72. A dispenser according to claim 71 and wherein said location is on an outwardly protruding portion of said cover for engaging inwardly facing legs of said prongs.

73. A dispenser according to claim 51 and wherein said dispenser engages said container in a ringless engagement.

74. A dispenser according to claim 51 and also comprising at least one spray nozzle.

75. A dispenser according to claim 51 and wherein said dispenser comprises a fluid passageway connected to a dip tube of said container.

76. A dispenser according to claim 58 and wherein said biasing spring element applies a fixed force to said plunger.

77. A dispenser according to claim 58 and wherein said biasing spring element applies a variable force to said plunger.

78. A dispenser according to claim 51 and also comprising a temperature dependent biasing force application functionality.

79. A dispenser according to claim 78 and wherein said temperature dependent biasing force application functionality comprises an ambient temperature sensor responsive to changes in ambient temperature outside said dispenser so as to selectively bias said shifting element.

80. A dispenser according to claim 79 and wherein said ambient temperature sensor comprises a bimetallic coil element.

81. A dispenser according to claim 79 and wherein said ambient temperature sensor does not communicate with said fluid.

82. A dispenser according to claim 79 and also comprising a rotatable cam fixedly mounted onto a shaft rotatable by said ambient temperature sensor.

83. A dispenser according to claim 79 and wherein said rotatable cam applies a biasing force to a biasing spring element.

84. A dispenser according to claim 83 and wherein said biasing force increases as ambient temperature outside said dispenser is lowered and decreases as said temperature rises.

85. A dispenser according to claim 84 and wherein said biasing force is minimized when said temperature is below a minimum operation temperature.

86. A dispenser according to claim 84 and wherein said biasing force is minimized when said temperature is above a maximum operation temperature.

87. A dispenser according to claim 86 and wherein said temperature above said maximum operation temperature is below a shift actuating temperature of said shifting element.

88. A dispenser according to claim 83 and wherein said rotatable cam has a thickness such that said rotatable cam applies a suitable biasing force to said shifting element via said biasing spring element so as to dispense said fluid substantially within a uniform selected time interval between sprays.

89. A dispenser according to claim 83 and wherein said rotatable cam has a thickness sufficiently small such that said rotatable cam provides a sufficiently low biasing force to said shifting element so as to minimize shifting of said shifting element.

90. A dispenser according to claim 51 and wherein said shifting element is loosely mounted within said dispenser.
91. A dispenser according to claim 51 and wherein said shifting element is seated in an annular recess in said dispenser.
92. A dispenser according to claim 51 and wherein said dispenser comprises a volume surrounding said shifting element which is formed with inclined walls on a bottom portion thereof.
93. A dispenser according to claim 51 and wherein at least part of said fluid passes around said shifting element via passageways formed in said dispenser.
94. A dispenser according to claim 51 and wherein a volume overlying said shifting element allows for enhanced dissipation of said fluid and thereby reduces incidence of liquid droplets in said fluid exiting said dispenser.
95. A dispenser according to claim 51 and wherein said dispenser defines an internal volume so as to relatively thermally isolate said intermittent dispensing assembly from the ambient outside said dispenser.
96. A dispenser according to claim 51 and wherein said fluid is dispensed as an aerosol.
97. A dispenser according to claim 51 and wherein said fluid is dispensed as a dissipated aerosol.
98. A dispenser according to claim 51 and wherein said fluid comprises a deodorant.
99. A dispenser according to claim 51 and wherein said fluid comprises an insecticide.

100. A dispenser according to claim 51 and also comprising a flow prevention element.

101. A dispenser for attachment to a container having a container opening valve and containing a fluid, comprising:

an actuator for keeping said container opening valve in a substantially open position so as to allow said fluid to pass into said dispenser; and

an intermittent dispensing valve that provides an intermittent fluid output, said intermittent dispensing valve comprising a temperature responsive valve control element which is responsive to temperature changes resulting from dispensed fluid,

said temperature responsive valve control element being generally freely supported around a perimeter thereof in said dispenser.

102. A dispenser according to claim 101 and wherein said control element comprises a bimetallic element having first and second operative orientations depending on the temperature thereof.

103. A dispenser according to claim 102 and wherein said bimetallic element comprises a bimetallic disc.

104. A dispenser according to claim 101 and wherein said intermittent dispensing valve comprises a plunger movable in response to shifting of said control element.

105. A dispenser according to claim 104 and wherein said plunger is loosely mounted onto said control element.

106. A dispenser according to claim 104 wherein said plunger is welded to said control element.

107. A dispenser according to claim 104 wherein said plunger is integrally formed with said control element.

108. A dispenser according to claim 104 and wherein said plunger is engaged by a biasing spring element.

109. A dispenser according to claim 108 and wherein said biasing spring element comprises a spiral spring.

110. A dispenser according to claim 108 and wherein said biasing spring element comprises a helical spring.

111. A dispenser according to claim 108 and wherein said biasing spring element comprises a leaf spring.

112. A dispenser according to claim 108 and wherein said biasing spring element comprises a folded over spring.

113. A dispenser according to claim 104 and wherein said plunger engages a ball of said intermittent dispensing valve.

114. A dispenser according to claim 104 and wherein said plunger comprises a pin for engaging said intermittent dispensing valve.

115. A dispenser according to claim 101 and also comprising a screw biased by a rotatably adjustable knob.

116. A dispenser according to claim 115 and wherein said rotatably adjustable knob is operative to select a time interval between sprays.

117. A dispenser according to claim 115 and wherein said rotatably adjustable knob is operative to select a spray initiation temperature.

118. A dispenser according to claim 101 and wherein said dispenser comprises a fastening element resiliently engaging said container.

119. A dispenser according to claim 101 and wherein said dispenser comprises a plurality of radially distributed inward facing resilient prongs for resiliently engaging said container.

120. A dispenser according to claim 119 and wherein said prongs are provided with legs for engaging said container so as to prevent removal of said dispenser from said container.

121. A dispenser according to claim 120 and wherein said prongs engage said container at a location adjacent to a portion of a cover of said container opening valve.

122. A dispenser according to claim 121 and wherein said location is on an outwardly protruding portion of said cover for engaging inwardly facing legs of said prongs.

123. A dispenser according to claim 101 and wherein said dispenser engages said container in a ringless engagement.

124. A dispenser according to claim 101 and also comprising at least one spray nozzle.

125. A dispenser according to claim 101 and wherein said dispenser is formed with a recess on a bottom portion thereof.

126. A dispenser according to claim 125 and wherein said recess engages a discharge orifice element of said container opening valve.

127. A dispenser according to claim 126 wherein said recess accommodates at least one removable mounting element configured to engage said discharge orifice element.

128. A dispenser according to claim 101 and also comprising a temperature dependent biasing force application functionality.

129. A dispenser according to claim 128 and wherein said temperature dependent biasing force application functionality comprises an ambient temperature sensor responsive to changes in ambient temperature outside said dispenser so as to selectively bias said control element.

130. A dispenser according to claim 129 and wherein said ambient temperature sensor comprises a bimetallic coil element.

131. A dispenser according to claim 129 and wherein said ambient temperature sensor does not communicate with said fluid.

132. A dispenser according to claim 129 and also comprising a rotatable cam fixedly mounted onto a shaft rotatable by said ambient temperature sensor.

133. A dispenser according to claim 101 and wherein a rotatable cam applies a biasing force to a biasing spring element.

134. A dispenser according to claim 133 and wherein said biasing force increases as ambient temperature outside said dispenser is lowered and decreases as said temperature rises.

135. A dispenser according to claim 134 and wherein said biasing force is minimized when said temperature is below a minimum operation temperature.

136. A dispenser according to claim 134 and wherein said biasing force is minimized when said temperature is above a maximum operation temperature.

137. A dispenser according to claim 136 and wherein said temperature above said maximum operation temperature is below a shift actuating temperature of said control element.

138. A dispenser according to claim 133 and wherein said rotatable cam has a thickness such that said rotatable cam applies a suitable biasing force to said control element via said biasing spring element so as to dispense said fluid substantially within a uniform selected time interval between sprays.

139. A dispenser according to claim 133 and wherein said rotatable cam has a thickness sufficiently small such that said rotatable cam provides a sufficiently low biasing force to said control element so as to minimize shifting of said control element.

140. A dispenser according to claim 101 and wherein said control element is seated in an annular recess in said dispenser.

141. A dispenser according to claim 101 and wherein said control element is loosely mounted within said dispenser.

142. A dispenser according to claim 101 and wherein said dispenser comprises a volume surrounding said control element, said volume being formed with inclined walls on a bottom portion thereof.

143. A dispenser according to claim 101 and wherein at least part of said fluid passes around said control element via passageways formed in said dispenser.

144. A dispenser according to claim 101 and wherein a volume overlying said control element allows for enhanced dissipation of said fluid and thereby reduces incidence of liquid droplets in said fluid exiting said dispenser.

145. A dispenser according to claim 101 and wherein said dispenser defines an internal volume so as to relatively thermally isolate said intermittent dispensing valve from the ambient outside said dispenser.
146. A dispenser according to claim 101 and wherein said fluid is dispensed as an aerosol.
147. A dispenser according to claim 101 and wherein said fluid is dispensed as a dissipated aerosol.
148. A dispenser according to claim 101 and wherein said fluid comprises a deodorant.
149. A dispenser according to claim 101 and wherein said fluid comprises an insecticide.
150. A dispenser according to claim 101 and also comprising a flow prevention element.
151. A dispenser for resilient attachment to a container containing a fluid for intermittently dispensing said fluid, comprising prongs for attachment to said container at a location adjacent to a portion of a cover of a container opening valve of said container.
152. A dispenser according to claim 151 and wherein said attachment is a ringless attachment.
153. A method for dispensing a fluid from a container comprising:
attaching a dispenser to said container, said dispenser comprising an actuator so as to allow said fluid to be released into said dispenser; and

automatically intermittently dispensing said fluid from said dispenser using an intermittent dispensing assembly comprising a temperature responsive shifting element,

said temperature responsive shifting element being shiftable in response to temperature changes in said dispenser and being generally freely supported around a perimeter thereof in said dispenser.

154. A method for dispensing a fluid according to claim 153 and wherein said shifting element has first and second operative orientations depending on the temperature thereof.

155. A method for dispensing a fluid according to claim 153 and wherein said attaching said dispenser to said container comprises engaging said container with a fastening element.

156. A method for dispensing a fluid according to claim 153 and wherein said attaching said dispenser to said container comprises resiliently engaging said container with a plurality of radially distributed inward facing resilient prongs.

157. A method for dispensing a fluid according to claim 153 and wherein said intermittently dispensing comprises dispensing said fluid via at least one spray nozzle.

158. A method for dispensing a fluid according to claim 153 and also comprising selectively biasing said shifting element by an ambient temperature sensor.

159. A method for dispensing a fluid according to claim 153 and wherein said intermittently dispensing comprises opening a spray release valve of said dispenser so as to dispense said fluid.

160. A method for dispensing a fluid according to claim 153 and wherein said intermittently dispensing comprises retaining a portion of said fluid, and subsequently releasing said portion of said fluid.

161. A method for dispensing a fluid according to claim 153 and wherein said intermittently dispensing comprises passing at least part of said fluid around said shifting element, via passageways formed in said dispenser.

162. A method for dispensing a fluid according to claim 157 and wherein said intermittently dispensing comprises producing enhanced dissipation in a relatively large volume overlying said shifting element and reducing incidence of liquid droplets in said fluid exiting said at least one spray nozzle.

163. A method for dispensing a fluid according to claim 153 and wherein said intermittently dispensing comprises dispensing said fluid substantially within a uniform selected time interval between sprays.

164. A method for dispensing a fluid according to claim 153 and wherein said intermittently dispensing comprises dispensing said fluid substantially at a selected spray initiation temperature.

165. A method for dispensing a fluid according to claim 153 and wherein said intermittently dispensing comprises dispensing said fluid as an aerosol.

166. A method for dispensing a fluid according to claim 153 and wherein said intermittently dispensing comprises dispensing said fluid as a dissipated aerosol.

167. A method for dispensing a fluid according to claim 153 and wherein said intermittently dispensing comprises dispensing a deodorant.

168. A method for dispensing a fluid according to claim 153 and wherein said intermittently dispensing comprises dispensing an insecticide.

169. A method for dispensing a fluid according to claim 154 and wherein said shifting element shifts to said first operative orientation in response to cooling of said shifting element by dispensed fluid.

170. A method for dispensing a fluid according to claim 154 and wherein said shifting element shifts to said second operative orientation in response to warming of said shifting element by the ambient outside said dispenser.

171. A method for dispensing a fluid according to claim 153 and also comprising positioning a flow prevention element of said dispenser to allow said fluid to be released into said dispenser.

172. A method for dispensing a fluid from a container comprising:
providing a container with a container opening;
attaching a dispenser to said container for receiving said fluid from said container; and
automatically intermittently dispensing said fluid from said dispenser using an intermittent dispensing assembly comprising a temperature responsive shifting element,
said temperature responsive shifting element being shiftable in response to temperature changes in said dispenser and being generally freely supported around a perimeter thereof in said dispenser.

173. A method for dispensing a fluid according to claim 172 and wherein said shifting element has first and second operative orientations depending on the temperature thereof.

174. A method for dispensing a fluid according to claim 172 and wherein said attaching said dispenser to said container comprises engaging said container with an extension extending from said dispenser.

175. A method for dispensing a fluid according to claim 172 and wherein said intermittently dispensing comprises dispensing said fluid via at least one spray nozzle.

176. A method for dispensing a fluid according to claim 172 and also comprising selectively biasing said shifting element by an ambient temperature sensor.

177. A method for dispensing a fluid according to claim 172 and wherein said intermittently dispensing comprises opening a spray release valve of said dispenser so as to dispense said fluid.

178. A method for dispensing a fluid according to claim 172 and wherein said intermittently dispensing comprises retaining a portion of said fluid, and subsequently releasing said portion of said fluid.

179. A method for dispensing a fluid according to claim 172 and wherein said intermittently dispensing comprises passing at least part of said fluid around said shifting element, via passageways formed in said dispenser.

180. A method for dispensing a fluid according to claim 175 and wherein said intermittently dispensing comprises producing enhanced dissipation in a relatively large volume overlying said shifting element and reducing incidence of liquid droplets in said fluid exiting said at least one spray nozzle.

181. A method for dispensing a fluid according to claim 172 and wherein said intermittently dispensing comprises dispensing said fluid substantially within a uniform selected time interval between sprays.

182. A method for dispensing a fluid according to claim 172 and wherein said intermittently dispensing comprises dispensing said fluid substantially at a selected spray initiation temperature.

183. A method for dispensing a fluid according to claim 172 and wherein said intermittently dispensing comprises dispensing said fluid as an aerosol.

184. A method for dispensing a fluid according to claim 172 and wherein said intermittently dispensing comprises dispensing said fluid as a dissipated aerosol.

185. A method for dispensing a fluid according to claim 172 and wherein said intermittently dispensing comprises dispensing a deodorant.

186. A method for dispensing a fluid according to claim 172 and wherein said intermittently dispensing comprises dispensing an insecticide.

187. A method for dispensing a fluid according to claim 173 and wherein said shifting element shifts to said first operative orientation in response to cooling of said shifting element by dispensed fluid.

188. A method for dispensing a fluid according to claim 173 and wherein said shifting element shifts to said second operative orientation in response to warming of said shifting element by the ambient outside said dispenser.

189. A method for dispensing a fluid according to claim 172 and also comprising positioning a flow prevention element of said dispenser to allow said fluid to be released into said dispenser.

190. Biasing functionality for a dispenser intermittently dispensing a fluid in response to temperature changes, comprising:

a plunger;

a temperature responsive shifting element being shiftable in response to temperature changes and mounted on said plunger; and

a spring biasing element engaging said plunger so as to cause said shifting element to shift substantially at a selected temperature.

191. Biasing functionality according to claim 190 and wherein said shifting element comprises a bimetallic element having first and second operative orientations depending on the temperature thereof.

192. Biasing functionality according to claim 191 and wherein said bimetallic element comprises a bimetallic disc.

193. Biasing functionality according to claim 190 and wherein said plunger is loosely mounted onto said shifting element.

194. Biasing functionality according to claim 190 wherein said plunger is welded to said shifting element.

195. Biasing functionality according to claim 190 wherein said plunger is integrally formed with said shifting element.

196. Biasing functionality according to claim 190 and wherein said biasing spring element comprises a spiral spring.

197. Biasing functionality according to claim 190 and wherein said biasing spring element comprises a helical spring.

198. Biasing functionality according to claim 190 and wherein said biasing spring element comprises a leaf spring.

199. Biasing functionality according to claim 190 and wherein said biasing spring comprises a folded over spring.

200. Biasing functionality according to claim 190 and also comprising a screw biased by a rotatably adjustable knob and cooperating with said spring biasing element.

201. Biasing functionality according to claim 190 and wherein said biasing spring applies a fixed force to said plunger.
202. Biasing functionality according to claim 190 and wherein said biasing spring applies a variable force to said plunger.
203. Biasing functionality according to claim 200 and wherein said rotatably adjustable knob is operative to select a time interval between sprays.
204. Biasing functionality according to claim 200 and wherein said rotatably adjustable knob is operative to select a spray initiation temperature.
205. Biasing functionality according to claim 190 and also comprising temperature dependent biasing force application functionality.
206. Biasing functionality according to claim 205 and wherein said temperature dependent biasing force application functionality comprises an ambient temperature sensor responsive to changes in ambient temperature outside said dispenser so as to selectively bias said shifting element.
207. Biasing functionality according to claim 206 and wherein said ambient temperature sensor comprises a bimetallic coil element.
208. Biasing functionality according to claim 206 and wherein said ambient temperature sensor does not communicate with said fluid.
209. Biasing functionality according to claim 206 and also comprising a rotatable cam fixedly mounted onto a shaft rotatable by said ambient temperature sensor.
210. Biasing functionality according to claim 200 and wherein a rotatable cam operated by said knob applies a biasing force to said biasing spring element.

211. Biasing functionality according to claim 210 and wherein said biasing force increases as ambient temperature outside said dispenser is lowered and decreases as said temperature rises.

212. Biasing functionality according to claim 211 and wherein said biasing force is minimized when said temperature is below a minimum operation temperature.

213. Biasing functionality according to claim 211 and wherein said biasing force is minimized when said temperature is above a maximum operation temperature.

214. Biasing functionality according to claim 213 and wherein said temperature above said maximum operation temperature is below a shift actuating temperature of said shifting element.

215. Biasing functionality according to claim 210 and wherein said rotatable cam has a thickness such that said rotatable cam applies a suitable biasing force to said shifting element via said biasing spring element so as to dispense said fluid substantially within a uniform selected time interval between sprays.

216. Biasing functionality according to claim 210 and wherein said rotatable cam has a thickness sufficiently small such that said rotatable cam provides a sufficiently low biasing force to said shifting element so as to minimize shifting of said shifting element.

217. Biasing functionality according to claim 190 and wherein said shifting element is loosely mounted within said dispenser.